



Dart Hawkesbury
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

649.4815

Job Sheet 165697



Part No: 649.4815

Job Qty: 6 ea

Part Name: Shim



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 10/6/17

Job Tracking No:

Due Date: 10/20/17

Created By: Marie Lajeunesse

Type: Stock

Description:

Note: DWG REV A SHEET 4 IPP REV:A 12.11.01 NEW ISSUE DD VERF:JLM

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Due Date	Standard		Workcenter/Supplier	
				Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time
90	Start up Operation	6 Ea	10/20/17	0.00	0.00	Start up container	
110	Waterjet	6 pcs	10/20/17	0.00	0.18	Waterjet1	
120	QC	6 pcs	10/20/17	0.00	0.00	QC2	
130	QC	6 pcs	10/20/17	0.00	0.00	QC8	
160	Outsource	6 pcs	10/20/17	0.00	0.00	Outsource4	
170	Packaging	6 pcs	10/20/17	0.00	0.00	Packaging2	
180	QC	6 pcs	10/20/17	0.00	0.00	QC5	
190	SprayPaint	6 pcs	10/20/17	0.00	0.03	Spray Paint	
200	QC	6 pcs	10/20/17	0.00	0.00	QC14	
210	Packaging	6 pcs	10/20/17	0.00	0.00	Packaging3	
220	QC21-SA	6 Ea	10/20/17	0.00	0.00	QC21	

Part Op 110 - 1-Cut as per Dwg Dwg Rev: _____ Prog Rev: _____ 2-Deburr if necessary

Descriptions: 160 - ISSUE P/O: _____ HARD ANODIZE, COLOR BLACK AS PER DWG. (SEE NOTE 2)

190 - PRIME IAW MIL-P-23377J TYPE1 CLASS N AS PER DWG. (SEE NOTE 2) PRIMER BATCH: _____

210 - ***IDENTIFY AS PER APICAL MPP-120 BY STAMPING P# AND REV***

1.9 mils thickness primer

Job Allocations

Operation	Component Part	Required	Inventory	Allocated	Std Qty
90-Start up Operation	M2024T3S.040	2	53	0	0

Part Specifications

Specifications could not be found.

Plex 10/6/17 10:16 AM Dart.lajeunesse.marie

Status: Stock

Part: 649.4815 B165697

Created: 9/30/17 10:56 AM DART.MICHAUD-FEBRILLE.VICTORIA



Serial No: S000019

Printed By: Goldston, Justin 10/2/17 10:44 AM

DART
AEROSPACE
S004454

Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K64 1K7
CANADA
TEL.: 1 613 632-5200
Email: sales@dartaero.com
www.dartaerospace.com



Shim

PART NO: 649.4815
Revision:
Operation: Outsource
Quantity: 6
Change No:

Mfg Date: 10/31/17 Job No: 165697
--

Name Bern
Date 17-11-07
Workcenter Spray paint - Qc14
Operation # 190-200

Issue:

Quality ☐
Wrong Routing ☒
Op Description ☐
Missing Information ☐
Material ☐
Other ☐

N/A already done by supplier

649.4815 165697 8004454

Work Order ID 165697

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165697

Page 1

Item ID: 649.4815

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Shim

Start Date: 9/12/2017 Start Qty: 6.00

6

Cust Item ID:

Required Date: 10/3/2017 Req'd Qty: 6.00

6

Customer:

Reference:

AUG 30 2017

Approvals:

Process Plan:

DAS

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

21

Date:

SPC (Y/N):

Date:

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

Draw Nbr

Revision Nbr

649.4800

X C1**AD 17.09.13**

0.00

110

110

Waterjet

FLOW CNC Waterjet

Memo

1-Cut as per Dwg

Dwg Rev: **81**Prog Rev: **81**

2-Deburr if necessary

0.18

@**17/09/17****DAS**
40
9-89

120

120

QC

Quality Control

QC2- Inspect parts off machine FAI/FAIB

Memo

0.00

0.00

@**17/09/17****DAS**
40
9-89

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation			Disposition		
			Completed By		
			Lead hand / Supervisor Approval Verification		
			QC / QA Coordinator Approval		
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : _____					

Work Order ID 165697

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165697

Page 2

Item ID: 649.4815 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Shim
Start Date: 9/12/2017 Start Qty: 6.00 ***6*** Cust Item ID:
Required Date: 10/3/2017 Req'd Qty: 6.00 ***6*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130	QC8- Inspect parts - second check	0.00				<u>6</u>	<u>0</u>	SEP 18 2017	DAS 9 9-89
130									
QC	Memo	0.00							
Quality Control									
160	Outsource process-Anodize per QSI017 4.1.10.1	0.00							DAS 13 9-89
160									
Outsource4	Memo	0.00				<u>6</u>		SEP 27 2017	
Outsource process - Anodize	ISSUE P/O: <u>37888</u>								
	HARD ANODIZE, COLOR BLACK AS PER DWG.(SEE NOTE 2)								
170	Receive & Inspect for Damage & Mat'l Certs	0.00							
170									
Packaging	Memo	0.00							
Packaging									<u>6x sp 17-10-30</u>

DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐
Past Expiry Date ☐	Manufacturing Process ☐				
Misidentified ☐	Past Due ☐	OTHER :			

Work Order ID 165697

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165697

Page 3

Item ID: 649.4815

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Shim

Start Date: 9/12/2017 Start Qty: 6.00

6

Cust Item ID:

Required Date: 10/3/2017 Req'd Qty: 6.00

6

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

180

QC5- Inspect part completeness to step on W/O

0.00

180

QC

Memo

0.00

Quality Control

190

190

SprayPaint

Spray Painting

Memo

PRIME IAW MIL-P-23377J TYPE 1 CLASS N AS PER DWG. (SEE NOTE 2)

PRIMER BATCH: _____

0.00
JAS
38
9-89

0.00

200

QC14- Inspect Spray Paint

0.00
JAS
38
9-89

0.00

200

QC

Memo

Quality Control

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER :							
Misidentified ☐	Past Due ☐								

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Quality Control

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : ☐					

Picklist Print

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Page 1

Work Order ID: 165697

165697

Parent Item: 649.4815

649 4815

Parent Item Name: Shim

Start Date: 9/12/2017

Required Date: 10/3/2017

Start Qty: 6.00

Required Qty: 6.00

Comments: IPP REV:A 12.11.01 NEW ISSUE DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

M2024T3S.040

Purchased

No

110

sf

7.6500

0.375

2.368421

M2024T3S 040

17/09/17

DAS
40
9-89

2024-T3 .040 sheet

Location

Loc Qty

Loc Code

MAT022

7.65

m137884

7.65

M138389

2.4

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐		OTHER : _____					

DART AEROSPACE LTD		Work Order:	165697
Description:		Part Number:	
Inspection Dwg:	Rev: C1		
			Page 1 of 1

INSPECTION SHEET

[illegible]

Measured by:	DAS	Checked by:	9-89	QC Inspector:	
Date:	17/09/17	Date:	SEP 18 2017	Date:	

Engineering Approval: (If necessary)		Date:	
--	--	--------------	--

Rev	Date	Change	Revised by	Approved
B	14.07.31	New Issue	K.J	

QQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval 		
Description Work Order Deviation				Disposition					
							Completed By		
							Lead hand / Supervisor Approval Verification		
							QC / QA Coordinator Approval		

Root Cause				FAULT CATEGORY							
Environment	☐	No Re-verification	☐	Pressure/Forced	☐	Temperature/Cure	☐	Power Loss/Surge	☐	Positioned Wrong	☐
Design	☐	Operator	☐	Bending	☐	Set-up	☐	Folio/Program	☐	Outside Dimensions	☐
Doc/Data	☐	Offset/Setup	☐	Centre Not Concentric	☐	BOM/Route	☐	Grain	☐	Over/Under tolerance	☐
Equip/Tooling	☐	Supplier	☐	Cracks	☐	Broken/Damage/Defect	☐	Weld	☐	Part Incorrect	☐
Handling/Pre	☐	Training	☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐	Wrong Stock Pulled	☐	Part Lost/Missing	☐
Material	☐	Use for Testing	☐	Cuffs	☐	Contamination	☐	Out of Sequence	☐	Part Moved	☐
Internal Transport	☐	Poor Information	☐	Crushing	☐	Countersink	☐	Off-set	☐	Drawing	☐
Tribal Knowledge	☐	Rushing	☐	Heat Treat	☐	Cut Too Short	☐	Mislabeled	☐	Finish	☐
LOA	☐	Product Improvement	☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐	Fit/Function	☐	Misread	☐
Substation	☐	Process Improvement	☐	Marks/Chatter	☐	Drill Holes	☐	Misaligned/off center	☐	Turning Sequence	☐
Past Expiry Date	☐	Manufacturing Process	☐	OTHER : _____							
Misidentified	☐	Past Due	☐								

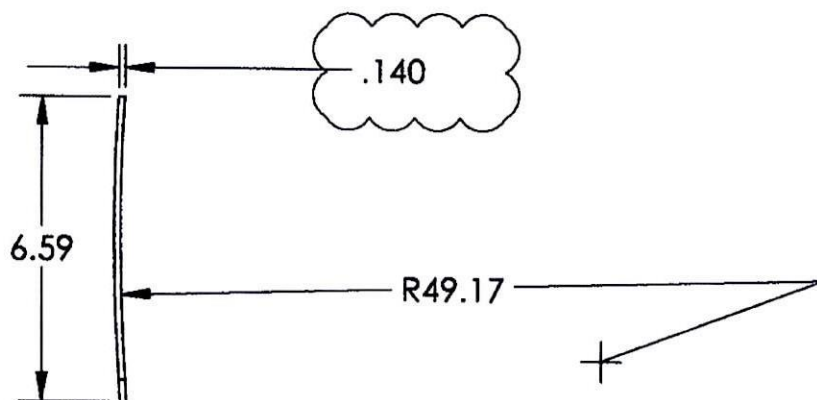


APICAL INDUSTRIES, INC.
dba DART AEROSPACE

ENGINEERING CHANGE NOTICE NO.		05848		SHEET 1 OF 1	
DWG NO.	646.4800	REV:	C	PREPARED BY	M. SLY
DATE:		08/23/17		EFFECT ON DWG ☐ INC. ☒ UNINC.	
DWG TITLE: SHEETMETAL					
APPROVED BY:	ENGR. <i>[Signature]</i>	MFG	<i>[Signature]</i>	QC	<i>[Signature]</i>
EFF. CURRENT ORDER					ECR:
REASON: ADD SHIMS AND REVISED DOUBLER THICKNESS					ACTION ITEM:

TRANSACTION CODES (TC):
A-ADD C-CREATE
R-REVISE D-DELETE

SHEET 5, ZONE B5 IS:



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SHEET 1, BOM, IS:

10	C	649.4819		SHIM		
9	C	649.4818		SHIM		
F/N/TC	PART NUMBER			SHEETMETAL		
	QTY			DESCRIPTION	MATERIAL	SPECIFICATION
DOCUMENTS EFFECTED:				CHANGE CATEGORY		
				DER REVIEW REQUIRED		

☐ PATTERN ☐ MDL ☐ INSTALL INSTRUCTIONS ☐ ICA ☐ FMS ☒ BOM

☐ MAJOR ☒ MINOR

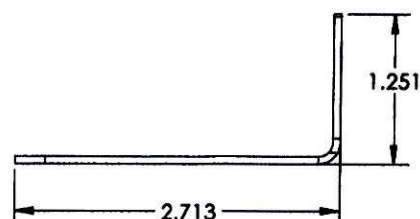
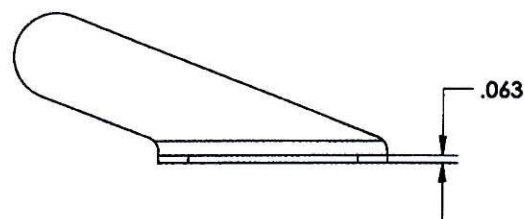
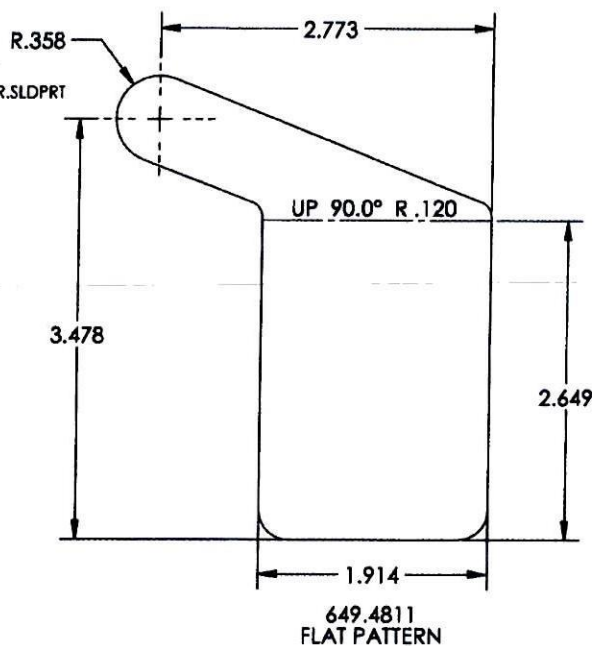
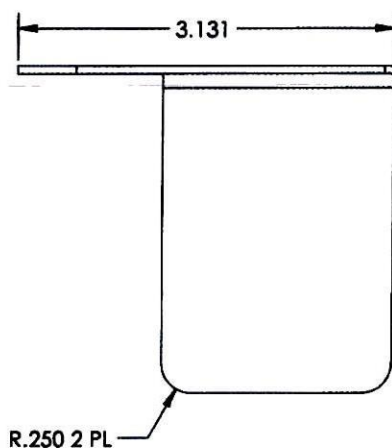
☐ YES ☒ NO

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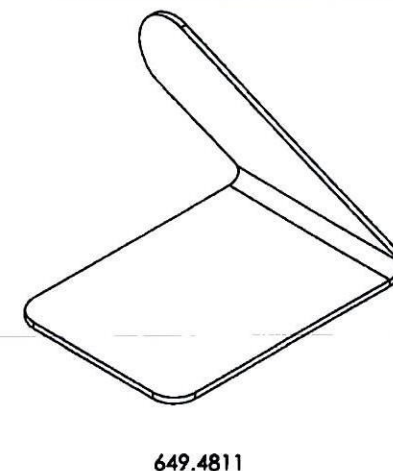
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NOTES: UNLESS OTHERWISE SPECIFIED

- 1 MATERIAL: ALUMINUM 2024-T3 PER AMS-QQ-A-250/4
- 2 FINISH: HARD ANODIZE IAW MIL-A-8625 TYPE III, CLASS 2. COLOR BLACK;
PRETREAT PR-148 ADHESION PROMOTER, PRIME IAW MIL-P-23377J, TYPE I, CLASS N
3. DEBURR AND BREAK ALL SHARP EDGES
4. IDENTIFY IAW MPP-120. LASER ETCH P/N AND REVISION 12PT. CENTURY GOTHIC.
- 5 PART DIMENSIONS CONTROLLED BY CAD MODEL: FILE NAME: 649.4816 DOUBLER.SLDPRT
6. INSPECTION DIMENSIONS SHOWN WITH FINISH APPROX. 3-5 MIL MAX PER FACE.



REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
0	LAST PROTOTYPE REVISION: P02		
A	INITIAL RELEASE	11-09-11	P. BRAVO
B	INCORPORATED ECN 09405	06-11-12	P. BRAVO
B	INCORPORATED ECN 09403	07-06-14	P. BRAVO
C	INCORPORATED ECN 09801	07-24-17	P. BRAVO



UNINCORPORATED ECN(s)

05048

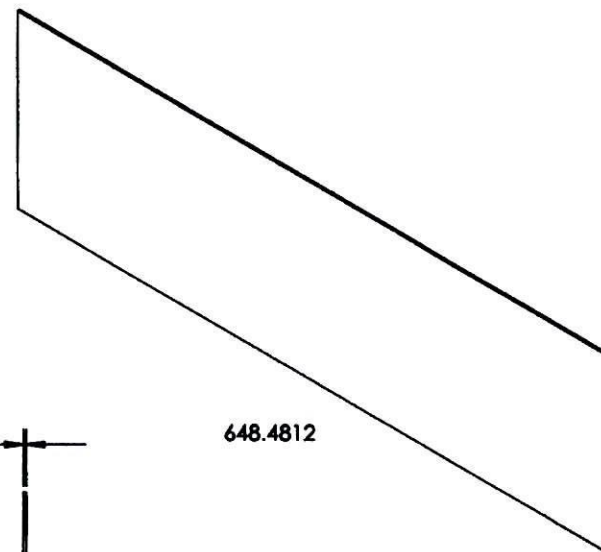
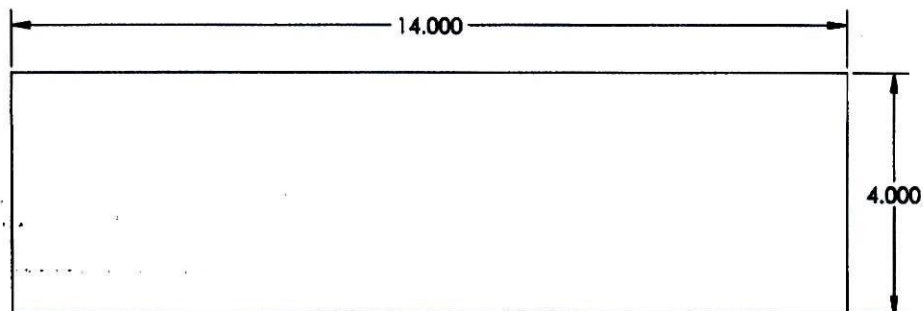
	8	649.4817	SHIM	△	△
	7	649.4816	DOUBLER	△	△ 2 5
	6	649.4815	SHIM	△	△ 2
	5	649.4814	DOUBLER	△	△ 2
	4	649.4813	SHIM	△	△
	3	649.4812	SHIM	△	△
	2	649.4811	CLIP	△	△
	1		DELETED		
	FIND #	PART #	DESCRIPTION	MAT'L	SPEC.
QTY		PARTS LIST			
NEXT ASSY (S)		DART AEROSPACE AFCAL INDUSTRIES INC. 880 DART AEROSPACE			3030 ENTERPRISE CT. SUITE A VISTA, CA. 92081 (760)-724-5300
649.4700					
		ORIGINAL DATE: 11-09-11 DRAWN BY: CRECZER A. GIANI P. BRAVO DRAWING APPROVAL: P. BRAVO CONTRACT NO.			
		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 3 PLACE DECIMALS ±.003 2 PLACE DECIMALS ±.010 ANGLES ±.5°			
		REV	CAGE CODE	DWG. NO.	REV.
		B	07M26	649.4800	C
		SCALE NONE			SHEET 1 OF 6

3030 ENTERPRISE CT.
SUITE A
VISTA, CA. 92081
(760) 724-5300

SHEETMETAL

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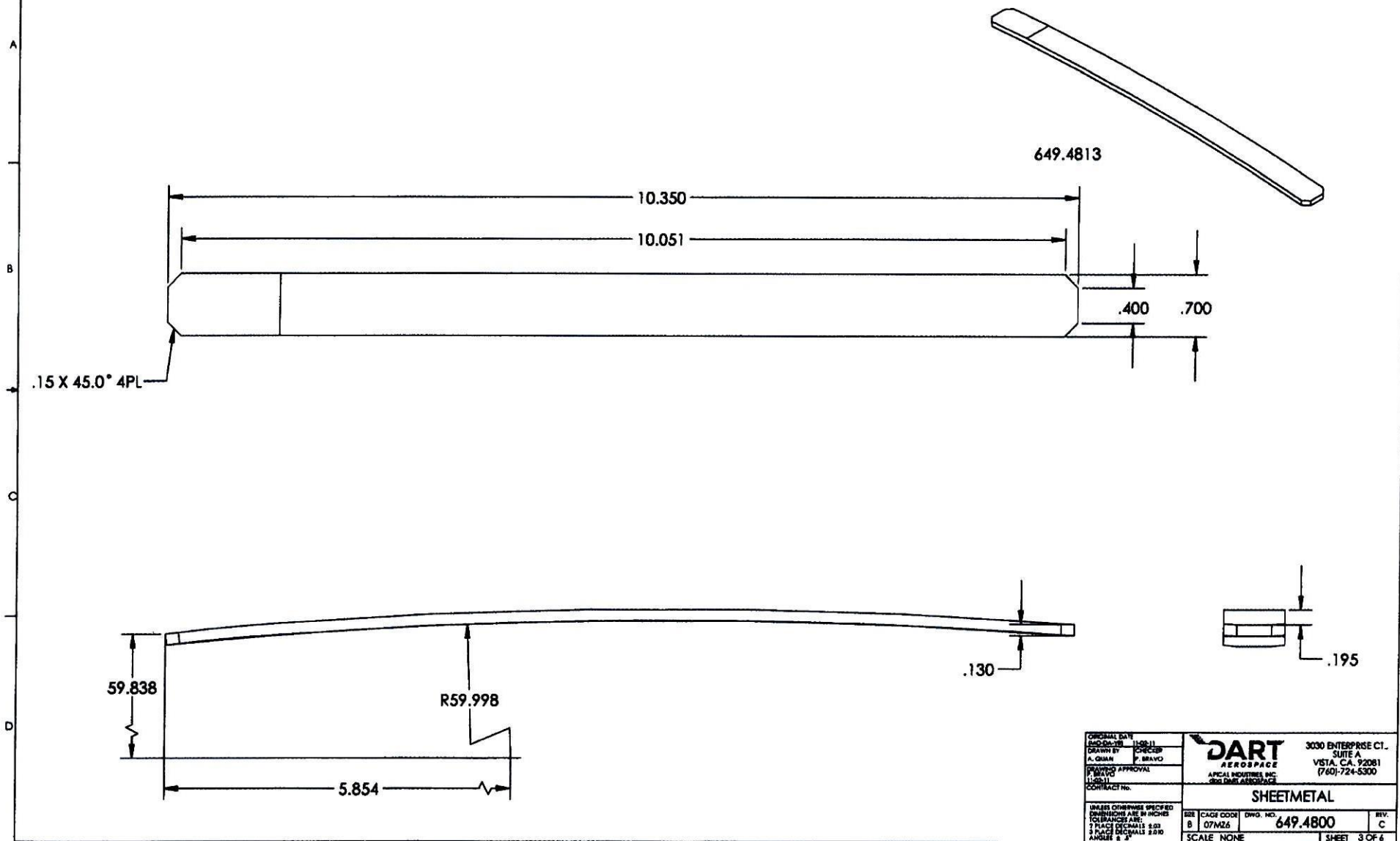
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ORIGINAL DATE 8/20/04/10 11/08/11		3030 ENTERPRISE CT., SUITE A VISTA, CA 92081 (760)-724-5300	
DRAWN BY A. QUINN		P. BRAYO	
DESIGNED BY P. BRAYO		APICAL INDUSTRIES, INC. DBA DART AEROSPACE	
CONTRACT NO.			
SHEETMETAL			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS .005 3 PLACE DECIMALS .010 ANGLES ± .5°		SHEET B	REV. C
CAGE CODE 07M26		DWG. NO. 649.4800	
SCALE NONE		SHEET 2 OF 6	

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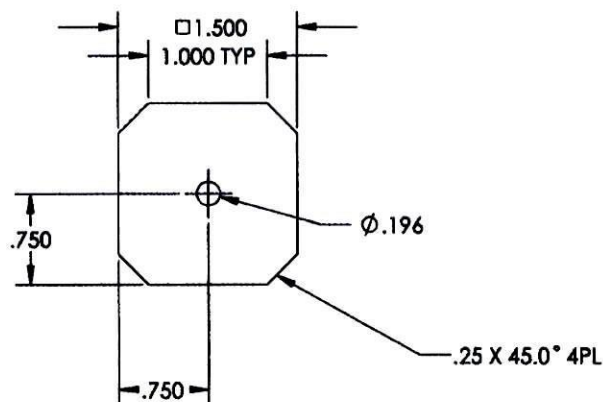
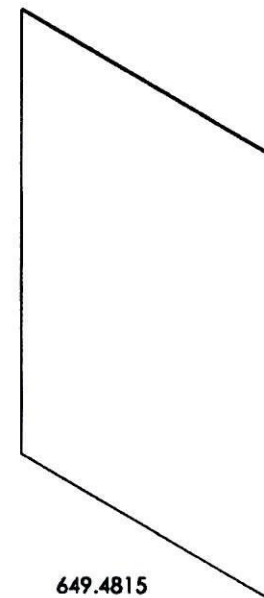
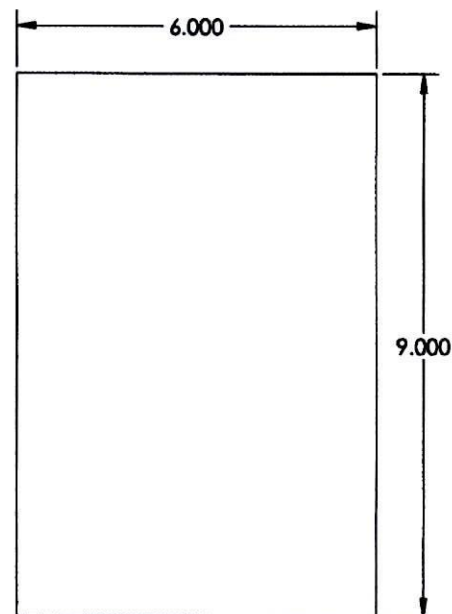
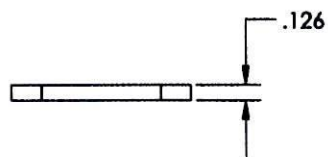
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ORIGINAL BY 8/20/04-JB		1/28/11		3030 ENTERPRISE CT., SUITE A VISTA, CA. 92081 (760)-724-5300	
DRAWN BY A. GUSH		CHECKED P. BRAYO		DART AEROSPACE APICAL INDUSTRIES INC. DBA DART AEROSPACE	
DRAWING APPROVAL P. BRAYO		11/28/11			
CONTRACT No.					
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.03 3 PLACE DECIMALS ±.010 ANGLES ±.5°					
REV.	DATE	CAGE CODE	DWG. NO.	REV.	
B		07M26	649.4800	C	
SCALE NONE			SHEET 3 OF 6		

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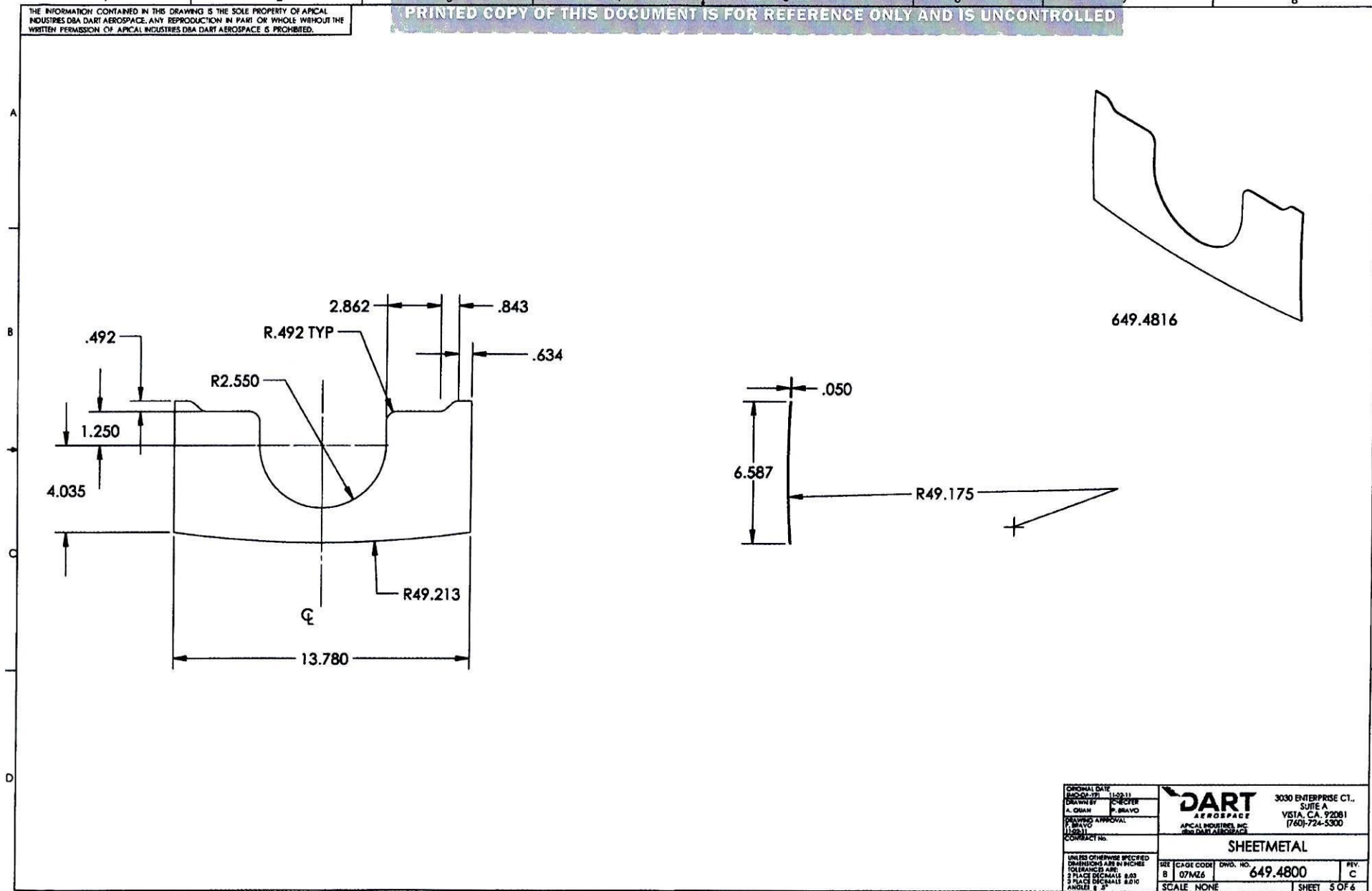
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ORIGINAL DATE (DD-MO-YR) 11-02-11		3030 ENTERPRISE CT., SUITE A VISTA, CA. 92081 (760)-724-5300	
DRAWN BY A. OLIVER	CHECKED P. BRAYVO	DART AEROSPACE APICAL INDUSTRIES, INC. (DBA DART AEROSPACE)	
DRAWING APPROVAL (11-02-11)			
CONTRACT No.		SHEETMETAL	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.03 3 PLACE DECIMALS ±.010 ANGLES ±.2°		SIZE [CAGE CODE] DWG. NO. B 07M26 649.4800	REV C
SCALE NONE		SHEET 4 OF 6	

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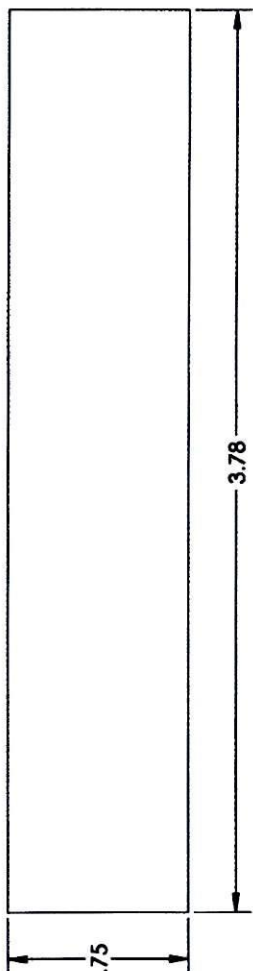
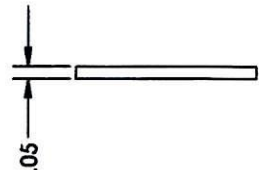
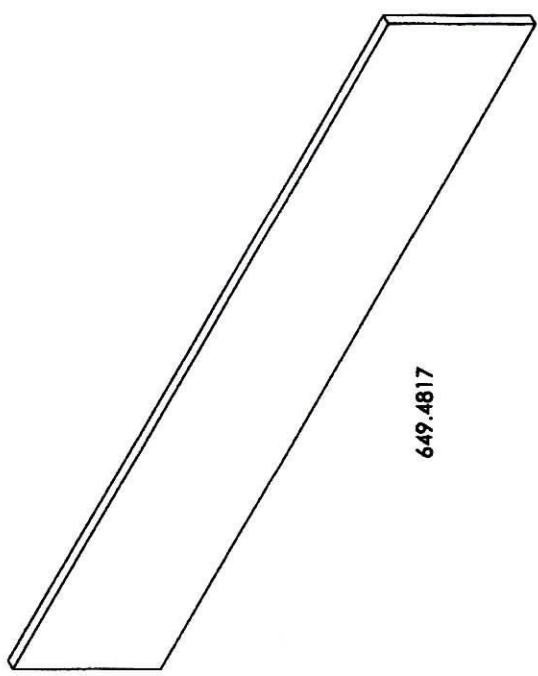
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ORIGINAL DATE 8/20/21 11:03:11		3030 ENTERPRISE CT., SUITE A VISTA, CA. 92081 (760) 724-3300	
DRAWN BY A. OMAR		P. BRAVO	
DRAWING APPROVAL P. BRAVO 11/29/21		APICAL INDUSTRIES, INC. DBA DART AEROSPACE	
CONTRACT NO.		SHEETMETAL	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 3 PLACE DECIMALS .003 2 PLACE DECIMALS .010 ANGLES .5°		REV. B	REV. C
SIZE B	CAGE CODE 07M26	DWG. NO. 649.4800	SCALE NONE
		SHEET 5 OF 6	

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ORIGINAL DATE: 11/03/11		3000 ENTERPRISE CT.	
DRAWN BY: A. GHAH		VISTA, CA 92081	
CHECKED BY: P. MAYO		PART NO: 649.4800	
APPROVED BY: [Signature]		SHEET METAL	
PART NAME: SHEET METAL		REV: C	
CAGE CODE: B		DWG. NO: 649.4800	
SCALE: NONE		SHEET: 6 OF 6	



Dart Hawkesbury
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER PO038172

Supplier: ATG001-VC
A.T.G. Industries Inc
731 INDUSTRIELLE ROAD
ROCKLAND
ON
K4K 1T2 Canada
Phone: 613-446-4544
Fax: 613-446-4556

Attention: Lalande, Marc-Andre

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

PO No: PO038172
PO Date: 10/27/17
Due Date: 10/27/17
Purchase Order Revision:
Revision Date:
Ship-To Contact: Phone:

Via: Ground
Pynt Terms: Net 30
Freight Terms:
Special Comments:

Items												
Line Item	Job	Part	Rev	Description	Item Tax	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
1	165947	RBEM632V4002101-13	-	Gauge Handle Ø4mm -Issue P/O to ATG: -ANODIZE COLOR BLACK, PER IAW MIL-A-8625F TYPE 2 CLASS 2 WATER SEAL -Certificate of Conformity is required		Firmed	10/27/17	2 pcs	0 pcs	2 pcs	\$16.25/pcs	\$32.50
2	165697	649.4815	-	Shim ISSUE P/O: HARD ANODIZE, COLOR BLACK AS PER DWG.(SEE NOTE 2)		Firmed	10/26/17	6 pcs	0 pcs	6 pcs	\$22.15/pcs	\$132.90
3	165746	649.4812	-	Shim ISSUE P/O: HARD ANODIZE, COLOR BLACK AS PER DWG.(SEE NOTE 2) PRIME IAW MIL-P-23377J TYPE1 CLASS N AS PER DWG. (SEE NOTE 2)		Firmed	10/27/17	6 pcs	0 pcs	6 pcs	\$22.15/pcs	\$132.90
4	165693	649.4813	-	Shim ISSUE P/O: As Per MPP-172 Section 2.1, Hard Anodize IAW MIL-A-8625, Type III, Class 2, Color Black As Per MPP-172 Section 4.2 Prime IAW MIL-P-23377J Type1 Class N		Firmed	10/27/17	10 pcs	0 pcs	10 pcs	\$16.25/pcs	\$162.50
5	166156	647.0410	-			Firmed	10/27/17	10 pcs	0 pcs	10 pcs	\$18.65/pcs	\$186.50



A.T.G. Industries Inc.
731 Industrielle Street
Rockland, ON K4K 1T2
Canada

Ph: (613) 446-4544

Fax: (613) 446-4556

Pack List

Number: 914027

Date: 18-Oct-17

To

Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ship To

Chantal Lavoie
Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ph: 613 632-9577

Fax: 613 632-1053

Ph: 613 632-9577

Fax: 613 632-1053

Terms		Ship Via	
		OUR TRUCK	
Quantity	Description		
	Please reference this document's Pack List number on all correspondences regarding this shipment. If you have any questions, please contact us.		
6 ea	Part: 649.4815 Shim Hard Black Anodize per MIL-A-8625F, Type III, Class 2, .0005-.0045" (.5 - 4.5mils). Prime per MIL-PRF-23377, Type I, Class N (Customer Supplied), .0006-.0009" (.6 - .9 mils). Job: 21763	Rev: C PO: PO37888 Line: 1	SPA-10-30
6 ea	Part: 649.4812 Shim Hard Black Anodize per MIL-A-8625F, Type III, Class 2, .0005-.0045" (.5 - 4.5mils). Prime per MIL-PRF-23377, Type I, Class N (Customer Supplied), .0006-.0009" (.6 - .9 mils). Job: 21764	Rev: C PO: PO37888 Line: 2	
10 ea	Part: 649.4813 Shim Hard Black Anodize per MIL-A-8625F, Type III, Class 2, .0005-.0045" (.5 - 4.5mils). Prime per MIL-PRF-23377, Type I, Class N (Customer Supplied), .0006-.0009" (.6 - .9 mils). Job: 21765	Rev: C PO: PO37888 Line: 3	
10 ea	Part: 647.0410 Tube Hard Black Anodize per MIL-A-8625F, Type III, Class 2, .0005-.0045" (.5 - 4.5mils). Prime per MIL-PRF-23377, Type I, Class N (Customer Supplied), .0006-.0009" (.6 - .9 mils). Job: 21766	Rev: N/C PO: PO37888 Line: 4	
CERTIFICATE OF CONFORMANCE A.T.G Industries Inc. certifies that all items in this shipment conform to the requirements. Date: 18/10/17		Made in Canada.	



A.T.G. Industries Inc.
731 Industrielle Street
Rockland, ON K4K 1T2
Canada

Ph: (613) 446-4544

Fax: (613) 446-4556

Pack List

Number: 914027

Date: 18-Oct-17

To

Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ship To

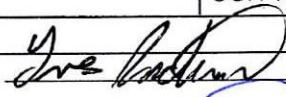
Chantal Lavoie
Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ph: 613 632-9577

Fax: 613 632-1053

Ph: 613 632-9577

Fax: 613 632-1053

Terms		Ship Via
		OUR TRUCK
Quantity	Description	
	Certified Signature: 	
	Receiver Signature: 	
A.T.G Industries Inc. is AS9100 Registered and Nadcap Chemical Processing Accredited.		
Note: This Packing Slip may contain parts that have been PLATED. Items that are plated may be subject to natural tarnishing and it is suggested that they be inspected within 24 hours of receipt.		
Made in Canada.		